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### **Perchlorate levels rise in winter**

by Mary Manning

Recent high levels of perchlorate found in Las Vegas drinking water are being blamed on temperature changes at Lake Mead.

In July, samples collected by the Southern Nevada Water Authority registered 11 parts per billion of perchlorate in both raw lake water and in treated drinking water.

By December, those levels rose to 16 parts per billion in raw lake water and 14 parts per billion in treated water.

But that's well below the levels which affect human health, according to studies collected from human use of the chemical. Scientists have reported perchlorate has been tracked in people treated for overactive thyroid glands.

Perchlorate, a rocket fuel booster made at two industrial plants near Henderson for 40 years, was first detected in August, said Kay Brothers, resources director for the Southern Nevada Water Authority.

The Nevada Division of Environmental Protection traced the source of the perchlorate to Kerr-McGee Corp. and American Pacific Co., formerly Pacific Production and Engineering Co., which moved its operation to Cedar City, Utah, after an explosion at its local plant in May 1988.

Groundwater contaminated from making the substance that boosts oxygen in rocket fuel is seeping into the Las Vegas Wash.

The Las Vegas Wash, six miles upstream from the Las Vegas Valley's drinking water intake pipeline, has introduced perchlorate into the lake ranging from less than 4 parts per billion to 16 parts per billion, depending on the time of year, Brothers said.

A part per billion represents less than a teaspoonful of a chemical in water filling two Olympic-sized swimming pools.

"The one thing perchlorate has done is provide a tracer to see how Lake Mead behaves," Brothers said.

In summer, when the lake's temperature rises, groundwater, surface runoff and sewage effluent ride the heat and stay near the surface, she explained.

Lake Mead's water typically turns over once a year around September or October. That's when perchlorate and other things such as bacteria, chemicals, toxins and pesticides mix throughout the body of water.

Once the water is fully mixed in winter, perchlorate levels rise, including the water collected at the drinking water pipeline, Brothers said.

In the spring as surface temperatures increase, the lower zone remains cold and the wash runoff rides on